

Claims

[c1] A method of fabricating a run capacitor/positive temperature coefficient resistor/overload (CAP/PTCR/OL) assembly for an electric motor, said method comprising the steps of:
providing a base formed of electrically insulative material wherein the base includes a first surface and a plurality of sidewalls extending therefrom to form a compartment with the base;
positioning a positive temperature coefficient resistor at least partially within the base compartment;
positioning an overload at least partially within the base compartment;
forming a cover from an electrically insulative material that includes a first surface, an opposite second surface and a plurality of sidewalls that extend from the first surface and is integrally formed with the first surface wherein the sidewalls extend from the first surface and form a compartment that is sized to at least partially receive a run capacitor therein;
forming at least one aperture that extends through the cover internal to the compartment, and a plurality of projections extending from the second surface;
and
coupling said cover to the base such that a plurality of components are contained within the base compartment.

[c2] A method in accordance with Claim 1 wherein forming a cover comprises;
forming a cover from an electrically insulative material that includes a first surface, an opposite second surface and a plurality of sidewalls that extends from the first surface and is integrally formed with the first surface wherein the sidewalls extend from the first surface and form a platform that is sized to at least partially receive a run capacitor therein; and
forming a capacitor enclosure that includes a plurality of sidewalls integrally formed with a semi-cylindrical cap, wherein the enclosure is configured to couple to the cover with the sidewalls circumscribing the platform.

[c3] A method in accordance with Claim 1 wherein forming a cover further comprises positioning the run capacitor assembly including a run capacitor and at least one electrical terminal within the cover compartment such that the

terminal extends through the aperture.

- [c4] A method in accordance with Claim 3 wherein forming a cover further comprises potting the run capacitor assembly within the cover compartment.
- [c5] A method in accordance with Claim 1 wherein forming a cover further comprises positioning at least one aperture to extend through the cover external to the cover compartment that is sized to receive at least one electrical terminal assembly therethrough.
- [c6] A method in accordance with Claim 5 wherein forming a cover further comprises forming a wall circumscribing the aperture and the wall is integrally formed with the cover first surface.
- [c7] A method in accordance with Claim 1 wherein forming a cover further comprises extending a portion of the cover into the cover compartment.
- [c8] A method in accordance with Claim 1 wherein forming a cover further comprises forming a plurality of projections to extend into the base compartment to engage a plurality of components disposed internally in the base compartment.
- [c9] A run capacitor/positive temperature coefficient resistor/overload (CAP/PTCR/OL) assembly configured to couple to an electric motor comprising:
 - a base formed of electrically insulative material and comprising a first surface and a plurality of sidewalls extending therefrom to form a compartment with said first surface;
 - a positive temperature coefficient resistor at least partially contained within said base compartment;
 - an overload at least partially contained within said base compartment; and
 - a cover formed of electrically insulative material, said cover coupled to said base enclosing the components within said base compartment and comprising a first surface, an opposite second surface and a plurality of sidewalls extending from said first surface and are integrally formed with said first surface, said sidewalls extend from said first surface and form a compartment that is sized to at least partially receive a run capacitor assembly therein, at least one aperture

extending through said cover internal to said compartment, and a plurality of projections extending from said second surface.

- [c10] A CAP/PTCR/OL assembly in accordance with Claim 9 wherein said base sidewalls extend substantially perpendicularly from said base.
- [c11] A combination run capacitor/positive temperature coefficient resistor/overload (CAP/PTCR/OL) module is described. The cover of the combination housing includes a capacitor compartment and terminal openings for receiving blade terminals of a run capacitor. The terminal openings in the cover align with blade receiving receptacles coupled to the PTCR start circuit. The blade terminals of a run capacitor are inserted into the receptacle openings and into electrical engagement with the blade receiving receptacles. The capacitor is supported and protected by a potting mixture filling the capacitor compartment. A CAP/PTCR/OL assembly in accordance with Claim 9 wherein said cover sidewalls extend substantially perpendicularly from said cover first surface.
- [c12] A CAP/PTCR/OL assembly in accordance with Claim 9 wherein said run capacitor assembly comprising a run capacitor and at least one electrical terminal is positioned within said cover compartment such that said terminal extends through said aperture.
- [c13] A CAP/PTCR/OL assembly in accordance with Claim 12 wherein said run capacitor assembly is potted in said cover compartment.
- [c14] A CAP/PTCR/OL assembly in accordance with Claim 9 wherein said cover further comprises at least one aperture extending through said cover external to said cover compartment and sized to receive at least one electrical terminal assembly.
- [c15] A CAP/PTCR/OL assembly in accordance with Claim 14 wherein said cover further comprises a second sidewall integrally formed with said cover first surface, said second sidewall circumscribing said aperture.
- [c16] A CAP/PTCR/OL assembly in accordance with Claim 9 wherein said first surface of said cover within said cover compartment extend concavely into at least a

portion of said cover compartment forming a cup-shaped recess in an end of said cover compartment adjacent said cover first surface.

[c17] A CAP/PTCR/OL assembly in accordance with Claim 9 wherein said plurality of projections extend into said base compartment to engage a plurality of components disposed internally in said base compartment.

[c18] A run capacitor/positive temperature coefficient resistor/overload (CAP/PTCR/OL) assembly cover configured to couple to a PTCR/OL base comprising:
a first surface;
a plurality of sidewalls that extend from said first surface and are integrally formed with said first surface, said sidewalls extend from said first surface and form a compartment that is sized to at least partially receive a run capacitor assembly therein;
at least one aperture extending through said cover internal to said compartment;
a second surface, opposite to said first surface and;
a plurality of projections extending from said second surface.

[c19] A cover in accordance with Claim 18 wherein said cover sidewalls extend substantially perpendicularly from said cover first surface.

[c20] A cover in accordance with Claim 18 wherein said run capacitor assembly comprising a run capacitor and at least one electrical terminal is positioned within said cover compartment such that said terminal extends through said aperture.

[c21] A cover in accordance with Claim 20 wherein said run capacitor assembly is potted in said cover compartment.

[c22] A cover in accordance with Claim 18 wherein said cover further comprises at least one aperture extending through said cover external to said cover compartment to receive at least one electrical terminal assembly.

[c23] A cover in accordance with Claim 22 wherein said cover further comprises a wall

integrally formed with said cover first surface, said wall circumscribing said aperture.

- [c24] A cover in accordance with Claim 18 wherein a portion of said cover extends into said cover compartment.
- [c25] A cover in accordance with Claim 18 wherein said plurality of projections are configured to extend into a base compartment to engage a plurality of components disposed internally in the base compartment.
- [c26] A run capacitor/positive temperature coefficient resistor/overload (CAP/PTCR/OL) assembly cover configured to couple to a PTCR/OL base comprising:
 - a first surface;
 - a plurality of sidewalls that extend from said first surface and are integrally formed with said first surface, said sidewalls extend from said first surface and form a platform that is sized to at least partially receive a run capacitor assembly thereon;
 - at least one aperture extending through said platform;
 - a second surface, opposite to said first surface and;
 - a plurality of projections extending from said second surface.
- [c27] A cover in accordance with Claim 26 wherein said cover sidewalls extend substantially perpendicularly from said cover first surface.
- [c28] A cover in accordance with Claim 26 wherein said run capacitor assembly comprising a run capacitor and at least one electrical terminal is positioned within said platform such that said terminal extends through said aperture.
- [c29] A cover in accordance with Claim 28 wherein an enclosure couples to said cover circumscribing said platform and enclosing said run capacitor assembly, said enclosure filled by a potting material thereby encapsulating said run capacitor assembly.
- [c30] A cover in accordance with Claim 26 wherein said cover further comprises at least one aperture extending through said cover external to said platform to

receive at least one electrical terminal assembly.

- [c31] A cover in accordance with Claim 30 wherein said cover further comprises a wall integrally formed with said cover first surface, said wall circumscribing said aperture.
- [c32] A cover in accordance with Claim 26 wherein said plurality of projections are configured to extend into a base compartment to engage a plurality of components disposed internally in the base compartment.